

TECHNICAL REVIEW DOCUMENT
For
MODIFICATION TO OPERATING PERMIT 96OPMR171

Colorado Power Partners – Brush 1 and 3
Morgan County
Source ID 0870027

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February 27, 2004
Revised March 16, 2004

I. Purpose:

This document establishes the decisions made regarding the requested modifications to the Operating Permit for the Colorado Power Partners – Brush 1 and 3 facility. This document provides information describing the type of modification and the changes made to the permit as requested by the source and the changes made due to the Division's analysis. This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the information provided in the original request for modification submitted to the Division on November 6, 2003, additional information submitted on September 30, 2003 and February 5, 2004 and various e-mail correspondence and telephone conversations with the source. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Permit Modification Request/Modification Type

The operating permit for the Brush 1 and 3 facility was issued on July 1, 2002. The source submitted a request on November 6, 2003 to modify the operating permit to increase the fuel consumption and emission limitations for the boilers and to revise the definitions of startup and shutdown for the turbines. With the increase in fuel consumption limits the source has requested an increase in emissions for the boilers to 11.5 tons/yr of NO_x and 9.7 tons/yr of CO. In their request the source indicated that the modification met the requirements for a minor permit modification and requested that

the modification be processed under the minor modification procedures in Colorado Regulation No. 3, Part C, Section X.

Colorado Regulation No. 3, Part C, Section X.A identifies those modifications that can be processed under the minor permit modification procedures. Specifically, minor permit modifications “are not otherwise required by the Division to be processed as a significant modification” (Colorado Regulation No. 3, Part C, Section X.A.6). The Division requires that “any change that causes a significant increase in emissions” be processed as a significant modification (Colorado Regulation No. 3, Part C, Section I.B.36.h.(i)). Since requested emissions for the boilers are below PSD significance levels, the Division agrees that this modification qualifies as a minor modification.

In addition, the Division requires that “any change that requires or changes a case-by-case determination of an emission limitation or standard”. Typically such changes would be modifying a BACT or RACT limit. The source a modification to the definition of startup and shutdown, not changes to the BACT limit for startup and shutdown. Therefore, the Division believes that the requested modification is not a change to a case-by-case determination of an emission limitation of standard and therefore qualifies as a minor modification.

III. Modeling

The increase in NO_x emissions from the boilers is 4.5 tons/yr. CO emissions were not included in the Title V operating permit since permitted emissions were below APEN de minimis levels. The increase in CO emissions is 7.9 tons/yr. Increased emissions of both NO_x and CO are well below the modeling threshold in the Division’s modeling guidance and a modeling analysis has previously been conducted for the Brush facility. Therefore, no modeling is required for this modification.

IV. Discussion of Modifications Made

Source Requested Modifications

The Division addressed the source’s requested modifications as follows:

Increased Fuel Consumption and Emission Limits for Boilers

The source requested that the fuel consumption limits for the boilers be increased to 230 mmSCF/yr. With the revisions to the fuel consumption limits, the source requested that emissions of NO_x and CO be increased to 11.5 tons/yr and 9.7 tons/yr, respectively. The changes will be made as requested. Note that at the higher fuel consumption limits, emissions of PM, PM₁₀, SO₂ and VOC are also higher, emissions of these pollutants are still below APEN de minimis levels and will not be included in the operating permit.

Revised Definitions of Startup and Shutdown

In their application November 6, 2003 application the source requested that the definitions for startup and shutdown be revised. The source requested that the definition of startup and shutdown for simple cycle operation be changed to when fuel is injected until the inlet guide vanes (IGVs) are equal to or less than 15% (startup) and when the IGVs are greater than 15% until the fuel control valve is closed (shutdown). For combined cycle operation, the source requested that the startup and shutdown definition be revised to when fuel is injected until the gross generation (combined load from the gas turbine and steam turbine generators) reaches or exceeds 27MW (startup) and when the gross generation is less than 27 MW and ends when the fuel control valve is closed (shutdown).

The source provided justification for these definitions in a November 6, 2003 e-mail and provided additional information in a February 5, 2004 submittal.

Based on the justification and additional information, the Division approved the requested definitions of startup and shutdown for combined cycle operation. For the simple cycle definitions, the source did not provide adequate justification to indicate that startup ends when the IGVs reach 15%. In addition, the source submitted data from 4 startup and shutdowns showing turbine load based on the requested definitions of startup and shutdown. Based on the Division's review of the data, we found that of the 4 startup cases, in one case the turbine was at 80% load and in another the turbine was at 105% load prior to the IGVs reaching 15%. The Division considers that startup should end prior to reaching 80 – 105% load particularly since the power purchase agreement identifies 10 MW (40% load) as the minimum load. The Division does understand that turbine load is affected by the ambient temperature and therefore we have revised the definition of startup to be based on reaching 60% load. Information on EPA's Clean Air Markets Division web page indicates that the generator for the Brush 3 turbine (simple cycle unit) is 25 MW. In the data submitted to the Division on February 5, 2004, the percent load shown on the CEMS data is based on a maximum load of 25 MW. However, in an e-mail sent on March 5, 2004, the source provided information from the power purchase agreement indicating that the net capability of Brush 3 varies from 25 to 30 MW with ambient temperature. The Title V operating permit issued for Brush 4A and 4B (BIV Generation Company, LLC), indicates that each turbine serves a generator with a nameplate capacity of 28.5 MW. The Brush 4A and 4B turbines are the same turbines as the Brush 3 turbine. Therefore, the Division will base the startup/shutdown definition on the 28.5 MW (60% load is 17.1 MW).

Change in Responsible Official

The Division received a letter on September 30, 2003 from the source requesting that the Responsible Official be changed. The change will be made as requested.

Note that James Nolan signed the minor modification application. Since he qualifies as a Responsible Official under the definition of Colorado Regulation No. 3, Part A, Section

I.B.54 and was previously identified as the Responsible Official, the Division considers that the minor modification application as submitted is acceptable and the provisions in Colorado Regulation No. 3, Part C, Section X.D.3.

Other Modifications

In addition to the requested modifications made by the source, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this modification.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments on other permits, to the Brush 1 and 3 Operating Permit with the source's requested modifications.

Changes to Page Following Cover Page

Added language specifying that the semi-annual reports and compliance certifications are due in the Division's office and that postmarks cannot be used for purposes of determining the timely receipt of such reports/certifications.

Section I – General Activities and Summary

In Condition 1.1, language was added indicating the rating of the turbine generators.

Conditions 13 and 17 in Condition 1.4 were renumbered to 14 and 18 and Condition 21 in Condition 1.5 was renumbered to 22. The renumbering changes were necessary due to the addition of the Common Provisions requirements in the General Conditions of the permit. In addition, General Condition 3.g (common provisions, affirmative defense) was added as a State-only requirement.

Changes to Section IV

The citation in the permit shield was corrected. The reference to Part A, Section I.B.43 was changed to Part A, Section I.B.44 and the reference to Part C, Section XIII was changed to Part C, Section XIII.B.

Section V – General Conditions

Added language from the Common Provisions (new condition 3). With this change the reference to "21.d" in Condition 20 (prompt deviation reporting) will be changed to "22.d", since the general conditions are renumbered with the addition of the Common Provisions.

Removed the upset and breakdown provisions from Condition 4 (emergency provisions) since they are included in the Common Provisions. Removed the upset and breakdown provisions from Condition 4 (emergency provisions) since they are included in the Common Provisions.

The citation in General Condition 17 (open burning) was revised. The open burning requirements are no longer in Reg 1 but are in new Reg 9. In addition, changed the reference in the text from "Reg 1" to "Reg 9".